

Amendments to the Claims

Please cancel claims 12-21 and 32-41 without prejudice. Please add new claims 42-62 as shown below in the Listing of Claims.

Listing of Claims

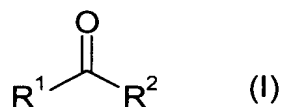
1-41. Cancelled.

42. (New) A method for preparing an α -hydroxycarboxylic acid, comprising:

- a) in a single reaction mixture, concurrently:
 - i) producing a cyanohydrin by combining an aldehyde or ketone with a cyanide donor in the presence of an oxynitrilase;
 - ii) converting said cyanohydrin to an α -hydroxycarboxylic acid with a nitrilase;

wherein said oxynitrilase and/or said nitrilase react in an enantioselective manner; and
- b) isolating said α -hydroxycarboxylic amide from said reaction mixture.

43. (New) The method of claim 42, wherein said aldehyde or ketone is a compound of Formula I:

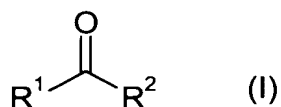


wherein:

R^1 is (C₁-C₈)-alkyl, (C₂-C₈)-alkenyl, (C₂-C₈)-alkinyl, (C₁-C₈)-alkoxyalkyl (C₃-C₈)-cycloalkyl, (C₆-C₁₈)-aryl, (C₇-C₁₉)-aralkyl, (C₃-C₁₈)-heteroaryl, (C₄-C₁₉)-hetero-aralkyl, ((C₁-C₈)-alkyl)₁₋₃-(C₃-C₈)-cycloalkyl, ((C₁-C₈)-alkyl)₁₋₃-(C₆-C₁₈)-aryl, ((C₁-C₈)-alkyl)₁₋₃-(C₃-C₁₈)-heteroaryl and
 R^2 is H, or R^1 .

44. (New) The method of claim 43, wherein R^2 is H.

45. (New) The method of claim 43, wherein R¹ is a (C₁-C₈)-alkyl.
46. (New) The method of claim 43, wherein R¹ is a (C₆-C₁₈)-aryl.
47. (New) The method of claim 43, wherein R¹ is a (C₇-C₁₉)-aralkyl or a (C₃-C₁₈)-heteroaryl.
48. (New) The method of claim 43, wherein:
- a) said oxynitrilase is isolated from almond kernels or from a species selected from the group consisting of: *Sorghum bicolor*, *Hevea brasiliensis*, and *Mannihot esculenta*; and
 - b) said nitrilase is from an organism selected from either a strain of *Rhodococcus* or *Alcaligenes faecalis*.
49. (New) A method for preparing an α -hydroxycarboxylic amide, comprising:
- a) in a single reaction mixture, concurrently:
 - i) producing a cyanohydrin by combining an aldehyde or ketone with a cyanide donor in the presence of an oxynitrilase;
 - ii) converting said cyanohydrin to said α -hydroxycarboxylic amide with a nitrile hydratase;wherein said oxynitrilase and/or said nitrile hydratase react in an enantioselective manner;
 - b) isolating said α -hydroxycarboxylic amide from said reaction mixture.
50. (New) The method of claim 49, wherein said aldehyde or ketone is a compound of Formula I:



wherein:

R¹ is (C₁-C₈)-alkyl, (C₂-C₈)-alkenyl, (C₂-C₈)-alkinyl, (C₁-C₈)-alkoxyalkyl (C₃-C₈)-cycloalkyl, (C₆-C₁₈)-aryl, (C₇-C₁₉)-aralkyl, (C₃-C₁₈)-heteroaryl, (C₄-C₁₉)-hetero-aralkyl, ((C₁-C₈)-alkyl)₁₋₃-(C₃-C₈)-cycloalkyl, ((C₁-C₈)-alkyl)₁₋₃-(C₆-C₁₈)-aryl, ((C₁-C₈)-alkyl)₁₋₃-(C₃-C₁₈)-heteroaryl and
R² is H, or R¹.

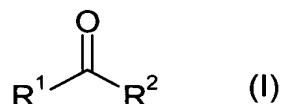
51. (New) The method of claim 50, wherein R² is H.
52. (New) The method of claim 50, wherein R¹ is a (C₁-C₈)-alkyl.
53. (New) The method of claim 50, wherein R¹ is a (C₆-C₁₈)-aryl.
54. (New) The method of claim 50, wherein R¹ is a (C₇-C₁₉)-aralkyl or a (C₃-C₁₈)-heteroaryl.
55. (New) The method of claim 50, wherein:
 - a) said oxynitrilase is isolated from almond kernels or from a species selected from the group consisting of: *Sorghum bicolor*, *Hevea brasiliensis*, and *Mannihot esculenta*; and
 - b) said nitrile hydratase is from an organism selected from the group consisting of: *Rhodococcus spec.*, *Rhodococcus rhodochrous* and *Rhodococcus erythropolis*.
56. (New) A method for preparing an α -hydroxycarboxylic acid, comprising:
 - a) in a single reaction mixture, concurrently:
 - i) producing a cyanohydrin by combining an aldehyde or ketone with a cyanide donor in the presence of an oxynitrilase;
 - ii) converting said cyanohydrin to an α -hydroxycarboxylic amide with a nitrile hydratase;

iii) converting said α -hydroxycarboxylic amide to said α -hydroxycarboxylic acid with an amidase;

wherein at least one of said oxynitrilase, said nitrile hydratase or said amidase react in an enantioselective manner;

b) isolating said α -hydroxycarboxylic acid from said reaction mixture.

57. (New) The method of claim 56, wherein said aldehyde or ketone is a compound of Formula I:



wherein:

R^1 is (C₁-C₈)-alkyl, (C₂-C₈)-alkenyl, (C₂-C₈)-alkinyl, (C₁-C₈)-alkoxyalkyl (C₃-C₈)-cycloalkyl, (C₆-C₁₈)-aryl, (C₇-C₁₉)-aralkyl, (C₃-C₁₈)-heteroaryl, (C₄-C₁₉)-hetero-aralkyl, ((C₁-C₈)-alkyl)₁₋₃-(C₃-C₈)-cycloalkyl, ((C₁-C₈)-alkyl)₁₋₃-(C₆-C₁₈)-aryl, ((C₁-C₈)-alkyl)₁₋₃-(C₃-C₁₈)-heteroaryl and
 R^2 is H, or R^1 .

58. (New) The method of claim 57, wherein R^2 is H.

59. (New) The method of claim 57, wherein R^1 is a (C₁-C₈)-alkyl.

60. (New) The method of claim 57, wherein R^1 is a (C₆-C₁₈)-aryl.

61. (New) The method of claim 57, wherein R^1 is a (C₇-C₁₉)-aralkyl or a (C₃-C₁₈)-heteroaryl.

62. (New) The method of claim 57, wherein:
- a) said oxynitrilase is isolated from almond kernels or from a species selected from the group consisting of: *Sorghum bicolor*, *Hevea brasiliensis*, and *Mannihot esculenta*; and
 - b) said nitrile hydratase is from an organism selected from the group consisting of: *Rhodococcus spec.*, *Rhodococcus rhodochrous* and *Rhodococcus erythropolis*.